AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A device for measuring the auto-fluorescence of a retina comprising:

an excitation light source adapted to provide an excitation light that maximizes the ~~at a wavelength corresponding to~~ excitation of flavoprotein auto-fluorescence and minimizes the excitation of non-flavoprotein auto-flurorescence; and

an image capture device adapted to record a single image representative of a retinal fluorescence signal generated in response to the excitation light, the image capture device including:

a filter adapted to maximize the passage of flavoprotein auto-fluorescence and attenuate non-flavoprotein auto-flurorescence in ~~that reduces background wavelengths from~~ the retina fluorescence signal; and

an image intensifier adapted to increase the retinal fluorescence signal strength.

2. (Currently Amended) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the excitation light source ~~is~~ comprises a mercury lamp.

3. (Currently Amended) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the excitation light source ~~is~~ comprises a laser.

4. (Original) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the excitation light is aligned with the retina using a dichroic reflector.

5. (Original) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the excitation light is aligned with the retina using a fiber optic system.

6. (Currently Amended) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the image capture device ~~is~~ comprises a charged coupled device.

7. (Currently Amended) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the image capture device ~~is~~ comprises a still camera.

8. (Currently Amended) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the image capture device ~~is~~ comprises a cooled charged coupled device camera.

9. (Original) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the image intensifier includes a gain factor of at least 100.

10. (Original) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the image capture device has a field of view sized to capture a single image of the retinal fluorescence signal generated by the retina.

11. (Original) The device for measuring the auto-fluorescence of a retina of claim 1, further comprising a processor programmed to analyze the retinal fluorescence signal with respect to a second stored retinal fluorescence signal.

12. (Original) The device for measuring the auto-fluorescence of a retina of claim 1, further comprising a processor programmed to analyze the retinal fluorescence signal to determine a contrast change.

13. (Original) The device for measuring the auto-fluorescence of a retina of claim 12, wherein the processor is programmed to analyze the retinal fluorescence signal to determine a local contrast change.

14. (Original) The device for measuring the auto-fluorescence of a retina of claim 12, wherein the processor is programmed to analyze the retinal fluorescence signal to determine a rate of contrast change.

15. (Canceled)

16. (Currently Amended) A method of non-invasively measuring the metabolic activity of a retina, the method comprising:

aligning an image detection device with the subject retina;

aligning an excitation light source with the subject retina;

providing an excitation light generated by the excitation light source to induce retinal auto-fluorescence in the subject retina, wherein the excitation light maximizes the excitation of flavoprotein auto-fluorescence and minimizes the excitation of non-flavoprotein auto-flurorescence;

capturing a single image representing the induced retinal auto-fluorescence;

intensifying the single image to increase the signal strength of the retinal auto-fluorescence; and

analyzing the single image to determine a contrast.

17. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, wherein aligning the excitation light source includes aligning a dichroic reflector to direct the excitation light towards the subject retina.

18. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, wherein aligning the excitation light source includes aligning a fiber optic system to direct the excitation light towards the subject retina.

19. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, wherein aligning the image detecting device includes aligning a charged coupled device camera.

20. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, wherein aligning the image detecting device includes aligning a still camera.

21. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 20, wherein aligning the image detecting device includes aligning an image intensifier.

22. (Currently Amended) The method of non-invasively measuring metabolic activity of a retina of claim 16, wherein aligning the excitation light source includes generating the excitation light at an excitation wavelength of about ~~450nm~~ 460 nm.

23. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, further including reducing the amount of ambient light presented to the subject retina.

24. (Currently Amended) The method of non-invasively measuring metabolic activity of a retina of claim 16, further including filtering the induced retinal auto-fluorescence to maximize the passage of flavoprotein auto-fluorescence and attenuate non-flavoprotein auto-flurorescence ~~beyond the wavelengths associated with flavoprotein auto-fluorescence~~.

25. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, wherein capturing a single image includes capturing an image representative of the auto-fluorescence specific to flavoproteins.

26. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, wherein analyzing the single image comparing the single image with a second stored single image.

27. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, wherein analyzing the single image includes determining a local contrast change.

28. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, wherein analyzing the single image includes determining a rate of contrast change.

29. (Original) The method of non-invasively measuring metabolic activity of a retina of claim 16, further including aligning at least one objective lens between the image detection device and the subject retina.

30. (Currently Amended) A method of upgrading a standard imaging device to non-invasively measure the metabolic activity of a retina, the method comprising:

replacing a standard light source with an excitation light source for generating a filtered excitation light that maximizes the excitation of flavoprotein auto-fluorescence and minimizes the excitation of non-flavoprotein auto-flurorescence;

positioning an image detection device to detect a single image representing a retinal auto-fluorescence generated in response to the filtered excitation light; and

increasing the intensity of the single image using an intensifier.

31. (Currently Amended) The method of upgrading a standard imaging device of claim 30, further comprising positioning a filter between the image detection device and a subject retina to maximize the passage of flavoprotein auto-fluorescence and attenuate

non-flavoprotein auto-flurorescence ~~prevent detection of wavelengths beyond those associated with flavoprotein auto-fluorescence~~.

32. (Original) The method of upgrading a standard imaging device of claim 30, wherein providing the excitation light source includes providing a mercury lamp.

33. (Original) The method of upgrading a standard imaging device of claim 30, wherein providing the excitation light source includes providing a laser.

34. (Currently Amended) The method of upgrading a standard imaging device of claim 30, wherein generating the filtered excitation light includes producing light at a wavelength of about ~~450nm~~ 460 nm.

35. (Original) The method of upgrading a standard imaging device of claim 30, further comprising positioning at least one objective lens to scale the detected single image.

36. (New) The device for measuring the auto-fluorescence of a retina of claim 1, wherein the excitation light source comprises an excitation filter having a filter range corresponding to excitation of flavoprotein auto-fluorescence.